Manchester Urban Ponds Restoration Program

Spring 2017 Program Update

City of Manchester Environmental Protection Division
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www.facebook.com/ManchesterUrbanPondsRestoration

Visit Us on the Web!

- ☐ Clean-Up Events
- ☐ Water Quality Data
- ☐ Publications

In honor of the passing of musical artist Prince, volunteers wore purple gloves at last year's Stevens Pond and Park cleanup.

Trash collected by volunteers at last year's cleanup at Stevens Pond and Park.

Join Us During Our 17th Annual Pond & Park Cleanup Events!

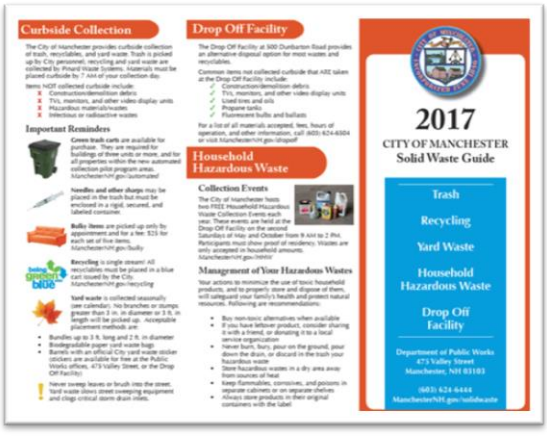
- ☐ **Saturday April 22, 2017 (Earth Day)** (9:00 – 11:00) **Black Brook / Blodget Park**
- ☐ **Saturday April 29, 2017** (9:00 – 11:00) **Stevens Pond / Park**
- ☐ **Saturday May 6, 2017** (9:00 – 11:00) **Nutts Pond / Precourt Park**
- ☐ **Tuesday June 6, 2017 (World Environmental Day)** (1:00 – 4:00) **McQuesten Brook (Tentative)**

Please dress appropriately for weather (there are no "rain dates") and wear rubber knee boots if you have them! Latex gloves and trash bags will be provided. Just bring yourself, a friend, and a sense of community spirit! Please arrive no later than 8:50am as we will break into groups and begin cleanups at 9:00am.

Since 2000, the Manchester Urban Ponds Restoration Program has organized 105 clean-up events. Over the past 16 years, 858 volunteers have spent 3,185 hours collecting 2,165 bags of trash! This does not include the items illegally "dumped" such as shopping carts (92), tires (392), car batteries, other car parts, construction debris, and other items. In addition, the value of volunteer time spent at these clean-ups has amounted to over $55,000 over these past 16 years!

2017 City of Manchester Solid Waste Guide

Please take note that the City of Manchester has published its 2017 Solid Waste Guide which discusses and includes a collection calendar for trash, recycling, yard waste, and household hazardous waste. Please also take note that the city's first **Household Hazardous Waste Day of 2017** will be held on Saturday May 13, 2017 from 9:00am – 2:00pm (the other to be held on October 14, 2017).



To Restore or Not to Restore – That is the McQuestion

By: Michele L. Tremblay, President of the Board of Directors of the New Hampshire Rivers Council

When an eight year-old girl comes to you with dead, wild, and native eastern brook trout and asks why they died, there *is* no question about restoration.

What began as a New Hampshire Rivers Council annual clean-up in partnership with employees from Anheuser-Busch observing World Environment Day, became a comprehensive watershed restoration and management plan that was immediately implemented with stunning on-the-ground results.

The New Hampshire Rivers Council, in partnership with the New Hampshire Department of Environmental Services, NH Fish and Game Department, City of Manchester, Town of Bedford, Trout Unlimited Merrimack Valley Chapter, Manchester Flyfishing Association, Ducks Unlimited, Manchester Urban Ponds Restoration Program, and local businesses, galvanized the planning efforts to restore McQuesten Brook and its watershed. A third of the watershed is covered by impervious surfaces; primarily parking areas, roads, and buildings. The brook was prevented from flowing freely by four dams created in the early 1950s, squeezed through two undersized culverts, and disappeared under a collapsed former road crossing.

Jeff Marcoux (NHDES), Michele Tremblay (New Hampshire Rivers Council), Steve Landry (NHDES), Andrew Czachor (NHDES), and Nick Nelson (inter-fluve) assist with small barrier removal and stream restoration of McQuesten Brook.

(Courtesy naturesource communications / naturesource.net)

For over a decade, surface waters within the McQuesten watershed failed to meet designated uses supporting aquatic life (fish) and primary contact recreation such as fishing, swimming, and boating. The impounded areas had filled in so much that there was often less than six inches of water with several feet of mucky sediment on the pond bottom. McQuesten Brook had lost its way.

McQuesten Brook begins to meander through the former impoundment behind Mallard Pond Plaza after stream barrier removal and restoration in August of 2016.

(Courtesy naturesource communications / naturesource.net)

With funding from the NH Department of Environmental Services Watershed Assistance Grants, NH Fish and Game Department, Samuel P Hunt Foundation, and New Hampshire Rivers Council member dues, CEI, Inc. was contracted to work with partners to study the watershed and draft a plan with specific recommendations and priorities to improve watershed quality.

Last summer, the removal of the four dams in Manchester and the two culverts (one replaced with a bridge) and a collapsed and abandoned road crossing in Bedford were partially funded through NH Department of Environmental Services Watershed Assistance Grants and Aquatic Resource Mitigation Programs and New Hampshire Rivers Council membership support. The City of Manchester donated equipment, labor, and the hauling and disposal of materials from dam removal sites.

The City's Department of Public Works crews gathered with volunteers to remove the first dam, off South Main Street in the heat of summer. Local homeowners generously provided access to the steep site through their backyards. Although one of the hottest days of the year, the site was comfortable thanks to the shade in the well-wooded area and groundsprings keeping the water cool and clear. With two jackhammers and hand tools, the dam was removed just after midday. While volunteers continued to clean up the South Main Street site, City crews were deploying heavy equipment

to the three dam sites off Second Street. Within a week, all of the dams were removed with oversight from the New Hampshire Rivers Council's expert consultant, Inter-fluve. The firm staff are trained in the principles of geomorphology, the study of how streams form and flow.

"The Manchester Department of Public Works's donation was the catalyst for this effort," said Michele L. Tremblay, President, New Hampshire Rivers Council, "Without their vision and generosity, the dams would not have been removed." Manchester's donation also generated non-federal match dollars, a requirement for the Council to apply for and accept several grants to fund the project.

With the same funding sources through the Council, the Town of Bedford removed one culvert and replaced it with a full spanning bridge on Eastman Avenue. The old, collapsed road crossing under which the brook disappeared was also removed. On Wathen Road, the culvert was removed completely and the road discontinued. The Town purchased the one house on the other side of the brook from willing owners so there was no longer a need for the road to extend over McQuesten Brook.
The project was supported with a tapestry of partner donations and funding sources including Manchester's heavy equipment and operators, the purchase of property, and sledgehammers in the enthusiastic hands of volunteers.

McQuesten Brook is finding its way again with sources of water including many small tributaries and springs feeding cool water into the system. Seeds buried under water for nearly seventy years have sprouted and are growing lushly in the rich sediment that was once the bottom of the pond. On the first morning after the dam removals, night herons, ducks, songbirds, raccoons, native trout, and other fish and other wildlife were exploring the newly restored habitat and finding rich sources of food; clear, cool water; and the other benefits of the restored area. Their tracks are evidence of the amazing diversity supported by this newly restored urban oasis.

Groundwater spring feeding McQuesten Brook.

(Courtesy naturesource communications / naturesource.net)

A now well-defined McQuesten Brook meanders through the former impoundment behind Mallard Pond Plaza after stream barrier removal and restoration in August of 2016.

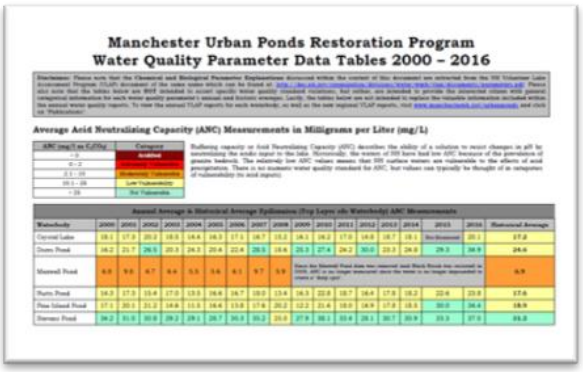
(Courtesy naturesource communications / naturesource.net)

Restore or not to restore? If you ask local businesses, residents, native eastern brook trout, and the other wildlife flourishing there today, there is no question.

To learn more, sign-up for project announcements, and dates for volunteer clean-ups and other events, please visit NHRivers.org.

Michele L. Tremblay is a Manchester native and serves as the president of the board of directors of the New Hampshire Rivers Council. She is principal of naturesource communications.

2016 Water Quality Reports Available


Manchester Urban Ponds Restoration Program
Water Quality Parameter Data Tables 2000 – 2016

Average Acid Neutralizing Capacity (ANC) Measurements in Milligrams per Liter (mg/L)

The formal Volunteer Lake Assessment Program (VLAP) and Volunteer River Assessment Program (VRAP) annual water quality reports from 2016 have been posted on-line and we've updated our own Water Quality Parameter Data Tables to include data collected this summer. Check out the Water Quality Data page to view the VLAP and VRAP reports and All Ponds Water Quality Data Tables 2000-2016 to see how this year's data compares to previous years.

Nutt Pond Stormwater Improvement Update

By: Jeff Marcoux, NH Department of Environmental Services, Watershed Assistance Section

Surrounded by urban land uses and impervious surfaces such as building, roads, and parking lots, Nutt Pond receives excessive amounts of polluted runoff during precipitation events and spring snowmelt. Water quality in the pond has been greatly impacted, and the pond is listed by the State of New Hampshire as impaired for recreational and aquatic life uses. In 2006, the City of Manchester and project partners including the State of NH and the US EPA developed a comprehensive restoration plan, and began implementing corrective actions in a multi-phased effort intended to restore Nutt Pond.

Tree box filter and improved boat ramp.

Throughout the past decade, several phases of runoff treatment projects have been completed. Much of the work has involved addressing sediment, nutrients such as phosphorus, trash, and other debris that runs off from the impervious surfaces in the pond's watershed. The practices completed in 2016 included the installation of a gravel wetland and sediment basins which can been seen near the rail trail on the west side of the pond, as well as the bioretention cell, tree box filters, porous pavement, and new boat ramp at Precourt Park. These practices supplement the stormwater treatment provided through previous phases, such as the constructed treatment wetlands off of March Avenue, stormwater devices at Precourt Park and the South Inlet, and the stream stabilization project completed behind Jewett School.

Bioretention area adjacent to boat ramp.

While the various treatment practices used in the Nutt Pond watershed vary in appearance and design, their intended functions are similar; to reduce, capture, or treat the pollutants contained in runoff before that pollution reaches the pond. While more progress is still needed, recent water quality monitoring indicates encouraging reductions in phosphorus and chlorophyll (the measure of the pond's response to phosphorus) in Nutt Pond. The work completed in 2016 makes another major advance toward protecting and restoring Nutt Pond and we are excited and optimistic that the improving water quality trends will continue.

Gravel wetland on west-side of the pond.

For additional information about the Nutt Pond restoration project please contact Jeff Marcoux, NHDES Watershed Assistance Section, at (603) 271-8862 or Jeffrey.marcoux@des.nh.gov.

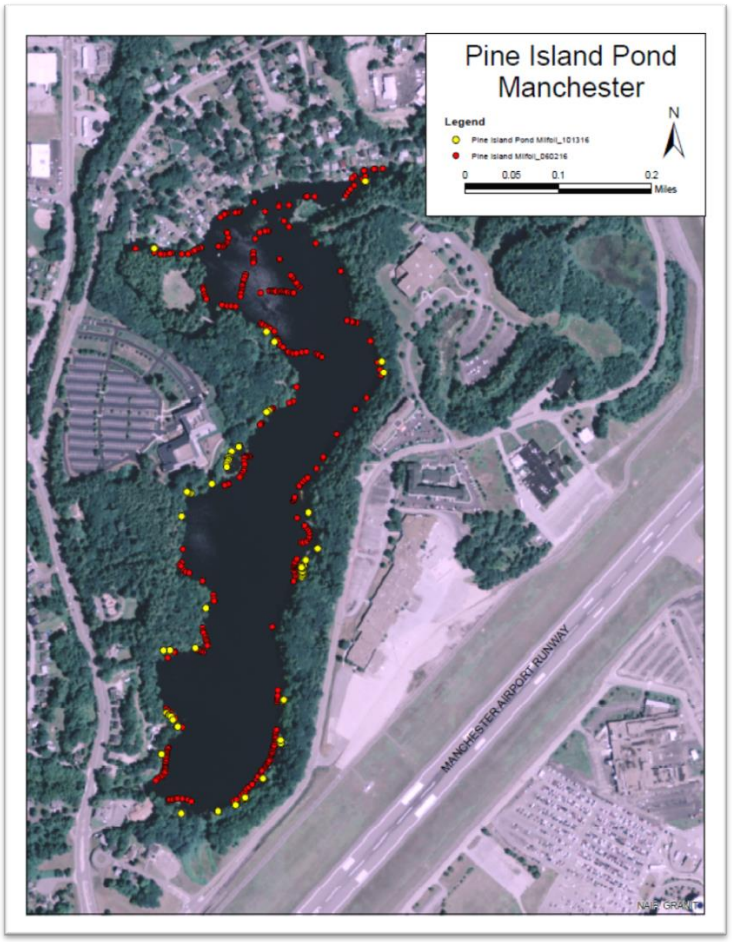
Pine Island Pond Milfoil Treatment Update

By: Jeffrey Bouvier, Manchester Environmental Protection Division
Amy Smagula, NH Department of Environmental Services Exotic Species Program

The City of Manchester's Environmental Protection Division (EPD) has secured a grant from the New Hampshire Department of Environmental Services (NHDES) to assist with funding to treat for variable milfoil, an invasive aquatic species, at Pine Island Pond. This program, which will be administered as a joint effort between NHDES and the EPD, is expected to kick off in June 2017. It will employ two separate contractors as part of the work. One of the contractors will be removing plants using a diver and a suction hose that transports the plants to the surface to be bagged and disposed of. The other will be using an herbicide treatment as part of the eradication efforts. This work is being done to support the NHDES' Pine Island Pond Long Term Milfoil Management Plan that was created in February 2016. The Pine Island Pond Environmental Society (PIPES), a local group, is expected to assist with volunteer efforts.

On June 2, 2016, Pine Island Pond was treated with Navigate, a granular aquatic herbicide, to control growths of variable milfoil covering about 20 acres around the perimeter of the pond. The treatment worked well to reduce growths of the variable milfoil, and follow up monitoring showed that we achieved about a 90 percent reduction in variable milfoil growth in the pond, while maintaining a healthy mix of native aquatic vegetation. The map shows a comparison of milfoil mapped in spring 2016 (red dots) before treatment, and what was left for milfoil by late season (yellow dots). A fragment barrier was not installed in the inlet as originally planned, due to low water levels and due to the fact that an ideal location for its placement has not yet been identified. NHDES will look to make this determination in spring 2017. NHDES plans to start surveying in May 2017, with the plans to dive on variable milfoil if densities are low, and to treat again if milfoil densities are high. Treatment will be followed by diver work if needed mid to late season.

Anyone who has questions about this work or would like to volunteer their time is asked to contact Jeremy Bouvier from the Manchester EPD at (603) 665–6899 or jbouvier@manchesternh.gov.



Top: *Variable milfoil infestation in Pine Island Pond before and after first herbicide treatment (courtesy NHDES).* ***Bottom:*** *Variable milfoil in bloom. (courtesy of NHDES).*